

We Claim:

1. An inflator comprising:
 - an igniter having ignition material that burns upon application of heat;
 - one gas generant disposed adjacent to the igniter whereby the igniter directly ignites the gas generant;
 - a filter positioned adjacent to the gas generant; and
 - a filter housing that receives the entire filter, the filter housing has a plurality of exit ports arranged around the circumference thereof whereby the exit ports are aligned with the filter, wherein the inflation gas for filling an airbag is produced only from the burning of the ignition material and the gas generant.
2. The inflator according to claim 1 further comprising a generant cup for storing the gas generant wherein an open end of the gas generant cup faces the igniter, a lid is fixedly attached to the open end of the generant cup creating an air-tight environment for the gas generant.
3. The inflator according to claim 2 further comprising a retaining ring surrounding the ignition material of the igniter and having generally a cylindrical shape, the retaining ring focuses gaseous products from burning of the ignition material into the lid of the generant cup.
4. The inflator according to claim 2 further comprising a diffuser chamber, the diffuser chamber fully receives the generant cup wherein the diffuser chamber has a first end facing the igniter and a second end having a plurality of apertures.

5. The inflator according to claim 4 wherein a wall of the diffuser chamber tapers inward closer to the second end of the diffuser chamber.
6. The inflator according to claim 4 wherein a wall of the diffuser chamber tapers inward closer to the first end of the diffuser chamber.
7. The inflator according to claim 4 wherein the second end of the diffuser chamber is telescopically inserted into an open end of the filter housing.
8. The inflator according to claim 4 wherein a longitudinal axis of the generant cup is parallel with a longitudinal axis of the filter, wherein one end of the filter contacts the second end of the diffuser chamber.
9. The inflator according to claim 8 wherein the plurality of exit ports are arranged in one row around the circumference of the filter housing, wherein atmospheric gas is present inside the filter housing.
10. The inflator according to claim 9 wherein the exit ports are arranged closer to the second end of the diffuser chamber than a closed end of the filter housing.
11. The inflator according to claim 1 further comprising a combustion chamber for storing the gas generant, the igniter is received in a first end of a the combustion chamber, a second end of the combustion chamber has a plurality of apertures for gas to flow out of the combustion chamber.
12. The inflator according to claim 11 further comprising a burst foil adhered to the second end of the combustion chamber to cover the plurality of apertures.

13. The inflator according to claim 11 further comprising an igniter retainer for holding the igniter, wherein the igniter retainer is attached to the first end of the combustion chamber.

14. The inflator according to claim 11 wherein the plurality of exit ports are arranged in one row around the circumference of the filter housing, wherein atmospheric gas is present inside the filter housing.

15. The inflator according to claim 14 wherein the exit ports are arranged closer to the second end of the diffuser chamber than a closed end of the filter housing.

16. An inflator comprising:
an igniter having ignition material that burns upon application of heat;
one gas generant disposed adjacent to the igniter whereby the igniter directly ignites the gas generant;
a filter positioned adjacent to the gas generant; and
an inflator housing that receives the entire filter, the filter housing has a plurality of exit ports arranged around the circumference thereof whereby the exit ports are aligned with the filter, wherein the inflation gas for filling an airbag is produced only from the burning of the ignition material and the gas generant.

17. The inflator according to claim 16 further comprising a generant cup for storing the gas generant wherein an open end of the gas generant cup faces the igniter.

18. The inflator according to claim 17 wherein the inflator housing completely receives the filter and the generant cup, wherein the plurality of exit ports are closer to the generant cup than a closed end of the inflator housing.

19. The inflator according to claim 17 further comprising a choke plate for regulating the gas flow of the inflation gas whereby the choke plate is disposed between the generant cup and the filter.